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Exchange pages of the description

40%... To this extent, the patients with colorectal polyps constitute a risk group. For this reason, early detection of colorectal cancer in adenomas and reliable differentiation from benign colorectal tissue are of crucial importance, especially for the prognosis and course of treatment.

Diagnosis and prognosis for this type of cancer are influenced by a variety of properties which are present at the time of the initial diagnosis. These factors include age, sex, duration of symptoms, condition of the intestinal obstruction, tumor localization, the need for a blood transfusion and the quality of the surgical intervention. Although a number of tumor properties such as vascular lymphatic invasiveness, degree of differentiation and preoperative titer of conventional tumor markers have shown a prognostic relevance. There are still no suitable markers for detection of early stages of cancer (benign colorectal precursors (adenomas) becoming malignant) or for histopathologically unremarkable micrometastases (minimal residual disease) which may be responsible for a recurrence of the carcinoma, even after curative surgical resection. The tumor markers CEA, CK 19 and CK 20 which have been used so far are indicative of the current prognosis but are not reliable in making a differential diagnosis.

Therefore, the object of this invention is to make available a reliable diagnostic agent and a method for detection colorectal cancer and also to permit the use of an effective agent for treatment of colorectal cancer.

To achieve this object, this invention proposes that a tissue biopsy of the human colon or rectum should be tested for the presence of HERG potassium channels.

Therefore, the object of this invention is a diagnostic agent for detection of colorectal cancer with which the presence of at least one HERG potassium channel in a tissue specimen of the human colon or rectum, which is free of HERG potassium channel in a healthy person, can be detected. Another object of the present invention is a method for diagnosing a colorectal cancer, whereby

the presence of at least one HERG potassium channel is detected in a tissue biopsy of the human colon or rectum, which is free of HERG potassium channels in a healthy person, or in lymph nodes or in a body fluid.

Detection of a HERG potassium channel with the diagnostic agent according to the present invention is of course a reliable indication of the presence of colorectal cancer only if the detection is performed in a tissue biopsy of the human colon or rectum or in lymph nodes or in a body fluid which is free of HERG potassium channels in a healthy person. This does not apply to myocardial tissue or the brain, where HERG potassium channels always occur in a healthy person. However, if a HERG potassium channel is detected in a tissue biopsy of the colon or rectum, for example, which are known not to normally have HERG potassium channels, then this is a reliable detection of the presence of cancer.

Detection of cancer based on the occurrence of HERG potassium channels is reliable even if this detection is performed in a body fluid such as blood, blood plasma, blood serum, urine, perspiration or lacrimal fluid or feces in which HERG potassium channels normally never occur.

An example of the inventive method and of diagnosing a cancer consists of diagnosing a colorectal cancer by detecting at least one HERG potassium channel in a tissue biopsy of the human colon.

For the diagnosis, a tissue biopsy of the colon and/or rectum is tested in the laboratory, with the HERG potassium channel being expressed in colorectal carcinoma cells; it [can] be detected by the highly sensitive RT-PCR method as well as by the immunohistochemical tests that are widely used in clinical practice.